Flexible Work-Arrangements and the Quality of Life

AIAS Working Paper 06
February 2003

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The research has been funded by the Amsterdam Institute of Advanced Labour Studies (AIAS) and Duitsland Instituut Amsterdam (DIA)

Amsterdam, February 2003

This paper can be downloaded at

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Abstract

In the present paper, an attempt has been made to measure the consequences for the quality of life of working with a part-time and/or temporary contract. Quality of life has been defined in a utilitarian and a liberal way. In the utilitarian definition, the quality of life is determined by the extent to which one is happy or satisfied with his or her life. In the liberal definition, it is not happiness which is the chief human end, but living according to one's own, freely formed, conception of the good life. The liberal definition used in this paper builds on the works of John Rawls and Amartya Sen. In the estimation, cohort effects, the gender-dimension and education-differentials are taken into account.

The main conclusions of the research are (i) that temporary work arrangements either on a full-time or on a part-time base decrease the life-satisfaction and, in addition, decrease the capabilities for freely living according to one's conception of the good-life; (ii) in most cases working part-time increases the life-satisfaction and the capabilities for a high quality of life in the liberal sense. This holds especially for women.

Keywords: Life-satisfaction, well-being, quality of life, conceptualisation, measurement, non-standard work-arrangements.

1 This working paper has been presented on the conference 'Combining Home, Work and Education', Braga, Portugal 26-27 October 2001. I would like to thank the participants for useful comments

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1 INTRODUCTION

Non-standard work arrangements – such as part-time work and temporary employment – have risen significantly over the past decades. Increasing competition by global changes forced employers at the end of the 1970s to drop the rigid and secure labour relations of the post-war era, and to search for greater flexibility in employment to counterbalance the rapid changes in the world market and consumer's demands. Labour laws designed to protect employees with permanent contracts, also encouraged employers to search for other work arrangements in order to avoid the mandates and the costs associated with these laws.

Non-standard work arrangements offer the employer certain advantages. The employer is better able – as compared to permanent, full-time work arrangements – to recruit or dispose of labour as required, to alter labour costs in line with market needs, to allocate labour efficiently within the firm and to fix working hours to suit business requirements (Reilly, 1998). Flexible work arrangements, such as fixed-term contracts, temporary work agency employment, variable working hours, on call employment etc. are important instruments of adjustment for the employer.

However, flexible work arrangements seem to have negative consequences for employees. They are often associated with lower pay, insecurity, stress, and social exclusion. Studies of the US indicate that most part-time work is involuntary (Kalleberg, 2000). Moreover, part-time work is also often associated with marginal employment in low-paid, low status jobs (such as sales, catering, and cleaning) (Nolan et al. 2001; Kalleberg, 2000 p. 345). Most studies have shown that part-timers earn less per hour than full-timers, even after controlling for education, experience and other relevant factors. Also, most of the temporary work seems to be involuntary and also temporary workers earn on average less than regular workers (Kalleberg 2000). It is said that working in flexible work arrangements has severe social consequences.

On the other hand, there are a number of circumstances in which flexible work arrangements could offer the employee some important benefits. A flexible or part time job could offer the employee opportunities to combine domestic needs and life-style preferences. For example, an employee who works temporary has – in contrast to the employee with a permanent contract – the opportunity to have long holidays. Furthermore, temporary work could enhance the work variety.

In the present paper, I will investigate which of the tendencies mentioned above is strongest. Whether working in flexible work arrangements leads primarily to feelings of insecurity, loss of confidence and decreases the opportunities to live according to the own preferences, or whether it leads to feelings of freedom, happiness and increases the opportunities for autonomous living. In answering the questions cohort effects, the gender-dimension, and education-differentials will be taken into account.

The next section describes the data used; section 3 gives an overview of the incidence of part-time and temporary work in Germany in the mid-nineties. Section 4 and 5 explain and develop the concept of 'quality of life' with the help of the variables in the dataset. In section 6 and 7 results will be presented and analysed.

2 THE DATA

The data are taken from the German Socio Economic Panel Data (GSOEP), the 1996 wave. The GSOEP is a household survey, which is taken annually. The sample consists of 6574 unweighted individuals[2]. They are all employed and between 16 and 64 years old. The sample multiplied by the individual weighting factors is supposed to be nationally representative. In the present paper the individuals are weighted by the standardised weighting factor. That is: the individual weighting factor is divided by the mean of the weighting factor of the sample. Hence, the mean of the new constructed weighting factor is exactly 1.

Working non-standard is in this paper defined as working less than 35 hours per week or working with a contract of limited duration. The next section gives an overview of the incidence of part-time and temporary work in Germany in the mid-nineties.

3 THE INCIDENCE OF PART-TIME AND TEMPORARY WORK IN GERMANY IN THE MID-NINETIES

Table 1 shows the incidence of non-standard work-arrangements in Germany in 1996 by a range of labour market characteristics. It shows firstly that working part-time and/or temporary is far more typical for women than for men. Secondly, temporary work is primarily located in the age-category 15-24: almost three times as much of the adolescent work with a temporary contract than the rest of the labour population does. Furthermore, part-time and permanent work-arrangements are more typical for the older employees. The incidence of part-time work in the age-category 55-64 slightly exceeds the overall mean.

If one takes the sectors into account, one sees that non-standard work-arrangements is primarily located in the government and non-profit sectors. The scores on part-time work in the sectors mentioned are especially exceeding the average incidence of part-time work. Furthermore, the incidence of non-standard work-arrangements in consumer's services, retail and repair, and hotels and catering, is very high.

Regarding the incidence of non-standard work-arrangements by occupation, the conclusion must be drawn that working part-time is more typical for low-skilled and low status jobs than for other professions. The incidence of non-standard work-arrangements in the categories 'elementary occupations' and 'service workers' are both well above the share of the professions mentioned in total employment. Furthermore, there is a relatively high incidence of temporary jobs in the profession 'professionals'.

Health- and the Retail- and Repair-industry, are, according to the research of Nolan et al. (2001, p. 108), low-paying industries in Germany. Thus, non-standard work-arrangements should be located at the lower end of the income distribution. Table 1 confirms this view. If one regards the net income distribution, one sees that the incidence of part-time and temporary work beneath the level of 2/3 of the median of the income distribution is almost four times the average incidence. The high incidence of temporary and/or part-time work at the lower end of the income distribution is not surprising. It is hard to earn as much on a part-time base as on a full-time base. However, if one regards the incidence beneath 2/3 of the median of the *hourly* wage distribution, the conclusions are almost the same: the incidence of

[2] In the appendix, more information on the sample-size.

non-standard work-arrangements at the lower end of the hourly wage distribution is well above the average incidence.

Table 1 Incidence of non-standard work-arrangements

Type of work-arrangement Incidence non-standard work-arrangement as % of active labour population	Part-time and temporary	Part-time and permanent	Full-time and temporary	Self-employed	Full-time and permanent		Total
Overall	1.7	16.4	4.0	10.4	67.5	100	5719
Gender							
Male	0.7	2.9	4.3	12.8	79.3	100	3181
Female	3.0	33.3	3.6	7.4	52.7	100	2539
Age-category							
16-24 years	0.7	7.2	14.4	9.8	67.9	100	305
25-39 years	2.1	14.9	4.0	8.0	71.1	100	2728
40-54 years	1.2	19.5	2.9	13.1	63.5	100	2000
55-64 years	2.2	17.6	2.8	12.5	64.9	100	686
Industry by nace							
AB: agriculture		12.0	0.9	40.7	46.3	100	108
C: mining			7.7		92.3	100	13
D: manufacturing	0.5	7.0	3.2	4.4	84.9	100	1553
E: utilities	1.5	1.5	3.0		94.0	100	67
F: construction		5.9	3.1	10.8	80.2	100	389
G50-51: Wholesale		13.8	4.1	19.5	62.6	100	123
G51: Retail and repair	2.2	35.2	3.9	15.5	43.3	100	543
H: hotels and catering		11.8	7.9	26.3	53.9	100	76
I: Transport and communication	1.5	9.8	1.9	9.4	77.4	100	266
J: Financial intermediation	0.5	19.9	0.5	10.0	69.2	100	201
K: business activities		18.8	0.4	43.9	36.8	100	223
L: public administration	3.3	13.9	5.0	0.9	76.9	100	575
M: education	5.6	31.5	6.4	10.5	46.0	100	409
N: health and social work	2.4	22.9	4.8	11.7	58.1	100	454
O: other community, social and personal activities	4.3	30.1	8.0	1.2	56.4	100	163
Occupation by isco_88							
1 legislators, senior officials and managers	2.0	18.6	4.7	2.5	72.2	100	187
2 Proffesionals	3.2	17.8	5.0	13.2	60.7	100	1118
3Technicians and associate professionals	0.5	14.3	0.9	24.0	60.2	100	566
4 Clerks	1.5	23.1	2.1	2.3	71.0	100	520
5 Service workers and shop and market sales workers	2.2	26.9	3.6	6.1	61.2	100	495
6 Skilled agricultural and fishery workers			1.9	85.2	13.0	100	54
7 Craft and related trade workers	0.1	2.4	4.0	8.6	85.0	100	931
8 Plant and machine operators and assemblers	0.4	3.2	6.5	7.9	82.0	100	278
9 elementary occupations	3.6	44.3	3.9	3.3	45.0	100	307
Income							
Hourly wage < 2/3*median	3.8	33.8	9.1	0.7	52.6	100	681
Hourly wage > 3/2*median	2.6	16.2	1.0	1.4	78.8	100	723

Type of work-arrangement Incidence non-standard work-arrangement as % of active labour population	Part-time and temporary	Part-time and permanent	Full-time and temporary	Self-employed	Full-time and permanent		Total
Overall	1.7	16.4	4.0	10.4	67.5	100	5719
Monthly net income < 2/3*median	6.5	57.3	3.7	11.4	21.0	100	1094
Monthly net income > 3/2*median	0.4	4.6	1.5	15.2	78.4	100	943
Federal state							
BERLIN - WEST 0	4.2	9.9	2.1	6.3	77.5	100	142
SCHLESWIGHOLSTN1	0.7	23.8	5.4	4.1	66.0	100	147
HAMBURG 2		6.0	3.4	6.8	83.8	100	117
LOWER SAXONY 3	1.0	17.0	2.7	15.5	63.9	100	407
BREMEN 4		13.3	15.6	6.7	64.4	100	45
N.-RHINEW.FALIA5	1.9	11.2	2.6	11.5	72.8	100	992
HESSE 6	2.3	11.7	2.6	9.7	73.8	100	309
RHINLNDPAL/SAAR7	1.1	13.4	3.7	9.0	72.8	100	268
BADENWUERTTEMBG8	1.4	16.4	4.0	8.1	70.1	100	578
BAVARIA 9	1.5	11.7	4.5	12.1	70.2	100	660
BERLIN (EAST) 11	1.5	9.1	6.1	13.6	69.7	100	66
MECKLENBGVOPMM12	1.5	15.2	9.1	12.1	62.1	100	66
BRANDENBURG 13		10.4	0.9	10.4	78.3	100	106
SACHSEN-ANHALT14	1.1	15.1	14.0	9.7	60.2	100	93
THUERINGEN 15	5.1	15.3	7.1	13.3	59.2	100	98
SAXONY 16	3.2	9.0	5.8	11.5	70.5	100	156

(Source: own computations on GSOEP)

In brief, working with a non-standard work-arrangement is – also in Germany in the mid nineties – above all something for women. It can predominantly be found in low-skilled/low status/low paid jobs. The incidence of non-standard work is especially underrepresented in the middle range of the income distribution, but does become slightly higher at the upper end of the distribution. Consequently, the concentration of non-standard work-arrangements is relatively high for professionals and those in the Education-sector. These results are in line with other research in the field (See Smith, 1997; Kalleberg, 2000 and Nolan et al., 2001).

However, these results are - at best - only *indications* of a lower quality of life of employees with flexible work arrangements. The fact that flexible work-arrangements are concentrated in these – unpleasant – parts of the economy is, however, not definitive evidence that flexible work-arrangements cause a lower quality of life for the employees involved. For assessing the quality of life and judging flexible work arrangements, we need much more information. We need to know the importance of income and status for life-quality. We need to know how one values leisure time, what flexible labour is like, whether it is outspokenly monotonous or not. We need to know how far flexible work-arrangements are an individual choice or not, and finally we need to know how well a flexible work-arrangement fits in the broader life-program of the individual. Above all, we need to define quality of life. We need to answer the question whether quality of life should be measured in terms of happiness and satisfaction or in terms of development or self-realisation. This is the subject of the next section.

4 QUALITY OF LIFE

Two dominant strands exist in political philosophy when assessing the quality of life: *utilitarianism* and *liberalism*. There are different versions of both strands. In the present paper, only the basic ideas of both strands will be addressed (for an overview of both strands, see Kymlicka, 1995; and Rachels, 1993).

Utilitarians define quality of life in terms of utillity. The exact definition of utility is, however, a matter of dispute. Bentham and other early utilitarians, like John Stuart Mill, saw utility or welfare as a desirable or agreeable state of consciousness. Bentham defined utility or happiness as the balance of pleasure over pain. Pleasure should and will be sought and pain will be avoided. The experience or the sensation of pleasure is the chief good for mankind. Or as Mill puts it: "The Utilitarian doctrine is that happiness is desirable, as an end; all other things being desirable as means to that end" (Mill quoted in Rachels 1993, p. 103).

According to modern views, however pleasure and pain are much too shallow to represent the full range of conscious states which determine an individual's overall utility. According to Dworkin, the concepts of "enjoyment" and "dissatisfaction" capture the range of important conscious states much better. Therefore, the balance of enjoyment over dissatisfaction is a more proper definition of utility. So, for increasing their utility, individuals will seek enjoyment and avoid dissatisfaction. The better one succeeds, the happier one is and the higher is, according to this theory, his or her quality of life. In this theory only the feelings of happiness are important for the quality of life. How happiness should be measured is, however, a subject of dispute within and outside the utilitarian strand (see for an overview Kymlicka 1995, Dworkin 1981). One of the questions is whether feelings of happiness or 'success' in a number of areas should be measured. Pending further inquiry, the present paper attempts to measure feelings of happiness or satisfaction and leaves aside the success-question.

The utilitarian account of 'quality of life' remained the most dominant in the field of philosophy, economics and public policy until the beginning of the seventies. Since then the liberal account is gaining ground. In the liberal account two concepts are of utmost importance: human dignity and – related – neutrality.

The concept of human dignity, originally founded by Kant, requires that human beings may never be used as a mean to an end. Or in Kant's terminology: human beings are ends in themselves. This is in sharp contrast to animals: "animals are merely means to an end. That end is Man" (Kant quoted in Rachels: 1993:127), according to Kant. This is because, firstly, human beings have desires and goals in relation to their projects. Kant considers animals to be unable to have self-conscious desires and goals. The second reason human beings have dignity is because they are rational agents. That is, they are capable of making their own decisions, setting their own goals, and guiding their own conduct by reason alone. Whilst human beings are rational agents with rational plans and desires, they are ends in themselves. This means they may never be allowed to be used as a mean for other ends than their own. This statement is strongly related to the second distinctive feature of liberalism: neutrality.

Neutrality requires that people may never be manipulated or be used to achieve our purposes, no matter how good these purposes may be. If human beings are capable of setting their own goals, they have to be treated as ends in themselves, and they should be free to pursue their own goals and projects and the state should not reward or penalise particular projects or conceptions of the good life. The extent to which one lives according to the own conception of the good – happily or unhappily – determines the liberal concept of human dignity. And in

liberalism human dignity instead of happiness or well-being, determines the quality of life. The questions regarding what this dignified life consists of and which means are needed for a dignified life, has in recent decades been addressed very persuasively by, among others, John Rawls and Amartya Sen.

Building on Kant's ideas, Rawls states that the chief human good is realising one's "higher-order-interests". Higher-order interests are interests concerning realising the needs for forming, revising, and pursuing a conception of the good life (1993, p. 72). For realising these higher-order interests, Rawls states that, "primary goods" are needed. The 'primary goods' are the basic liberties (i.e. the classical freedoms), income and wealth and the bases of self-respect. These primary goods are so called "all purpose means", things that men presumed to want whatever else they want (1971: 260). Hence, the more primary goods one possesses, the more one is capable of forming, revising and pursuing an own conception of the good life, which is the chief human good. However, given the Kantian concepts of dignity and neutrality, the extent to which individuals succeed in advancing their way of life, is not the ultimate end for a liberal state. The end is to maximise the extent to which individuals are *capable* to succeed in advancing their way of life. Therefore, for measuring the quality of life, one should measure the capabilities for forming, revising and pursuing a conception of the good life. These capabilities concern, according to Rawls, the primary goods: the basic liberties, income, wealth and the bases of self-respect.

Sen's view of capabilities for life-quality is more broad. He sees living as a combination of various doings and beings. These doings and beings represent part of the states of a person – in particular the various things that he or she manages to do or be in leading a life. Sen calls these doings and beings 'functionings'. And a capability "reflects the alternative combinations of functionings the person *can* achieve, and from which he or she can choose one collection" (Sen 1993: 31, *italics* added - CN). According to Sen, life-quality should be assessed in the concepts mentioned above: capabilities and functionings.

Some functionings are very basic, such as being adequately nourished, being in good health, well sheltered, etc. For these functionings one may need for instance – among others – Rawls's primary goods income and wealth. (Or in Sen's terminology: one should have the capability to get enough food in order to be well nourished (= functioning)).

Besides the basic functionings, there are also more complex functionings, such as achieving self-respect, being socially integrated, having control over one's own life and – in reference to Adam Smith – appearing in public without shame (Sen, 1993). The extent to which one has the capability to function in these ways, determines the quality of life, according to Sen.

In the present paper, the consequences of flexible work-arrangements for the quality of life will be assessed along the lines mentioned above. In the next section, the utilitarian and liberal accounts of the quality of life will be further developed with the help of the variables from the GSOEP-dataset.

5 DESCRIPTION OF THE KEY VARIABLES

5.1 THE UTILITARIAN ACCOUNT

In this section, an attempt will be made to operationalise the utilitarian, Rawlsian and Sennian accounts of life-quality in order to determine the relationship between flexibible work-arrangements and the quality of life. The three notions are all highly abstract and by way of operationalising them, one loses much of the concept's meaning. However, for assessing the consequences of for example policy or labour market developments, measuring – even in a poor way – the impact on the quality of life is of utmost importance.

In the GSOEP-dataset, there are two kinds of variables which attempt to measure well-being or happiness: variables which measure life satisfaction and variables which measure stress. The variables which measure life-satisfaction can be distinguished in those which measure general satisfaction and those which measure domain satisfaction. With general satisfaction is meant the satisfaction with life as a whole. In the GSOEP-dataset, two variables measure the general satisfaction. From a scale from 1 (extremely dissatisfied) to 10 (extremely satisfied), the interviewees have answered the questions: "How satisfied are you with your life today?", and "How happy do you think you will be in five years from now?"

Besides these general satisfaction variables, there are nine domain satisfaction-variables in the dataset. These variables measure the satisfaction with specific domains of life (Van Praag et al. 2000, p. 2). Like the general satisfaction-variables, the domain satisfaction variables have a scale from 1 to 10. In the dataset, the interviewee's satisfaction with (1) health, (2) work, (3) housework, (4) household income, (5) dwelling, (6) amount of leisure time, (7) goods and services, (8) standard of living, and (9) environment has been measured.

In addition to the two general-satisfaction variables mentioned, I have added one self-constructed variable: the aggregate of the nine domain-satisfaction variables mentioned above. All variables will be divided by their mean in order to make the effects comparable to each other. In the next section, I will examine to what extent flexible work-arrangements explain the variation of the general- and domain-satisfaction-variables.

Besides the variables mentioned, which measure satisfaction, there are also several variables in the GSOEP-dataset which measure stress. On a likert-scale from 1 (applies fully) to 4 (does not apply), the interviewees have been asked to what extent the following statements apply:

- Have control over own life
- Plans are successful
- Confident about future
- Not lonely
- Enjoys work
- Able to cope with things

The variables mentioned all correlate statistically significant.

The scores have been aggregated on these variables and divided by the mean. This constructed variable appears in the next sections under the name "*control over life*".

Furthermore, in measuring stress, I take into account three variables which measure from a scale from 1 (big worries) to 3 (no worries) to what extent one is worried about (1) finances, (2) dwelling, and (3) job security. The variables will be aggregated and divided by the mean to standardise the scores and make them comparable with the satisfaction-variables. I call this constructed variable "*the amount of worries*". In the next section, it will be examined to what extent flexible work-arrangements produce the feelings mentioned above and the aggregate of the control- and worries-variables: *stress*.

5.2 THE LIBERAL ACCOUNT

In the liberal account, the focus is on human dignity and autonomy rather than on subjective feelings of utility, well-being or satisfaction. Rawls stated that for human dignity, one should have the capabilities to form, revise and pursue an own conception of the good life. According to Rawls, primary goods reflect these capabilities. The primary goods were: the basic liberties, income and wealth and the bases of self-respect. The more primary goods one has, the more one has the capability to live according to the own conception of the good, which is the chief human good.

In this paper, I assume that all interviewees have the same basic liberties. The focus will be on income and wealth, and the bases of self-respect. The primary goods income and wealth are relatively easy to operationalise for the research. In the present paper, we use the post-government household income as a proxy for the primary good 'income' and the variable 'estimated value of the income from dividend and interest' as a proxy for wealth. How the 'bases of self-respect' should be operationalised is far more complex. Pending further inquiry, I decided to use the 'control over life' variable mentioned in section 5.1 to construct the primary good 'bases of self-respect'. This vector appears in section 7 under the name *primary goods.*

The proxies of the primary goods will be taken together. This measure will be an indication of the extent to which one is capable to pursue an own conception of the good. The question whether flexible work-arrangements increase or decrease this measure, will be addressed in the next section.

Sen's theory focuses on the extent to which one is *capable* to *function* as a human being. For functioning as a human being, one should at least have the capabilities to be adequately nourished, adequately sheltered, the capability of escaping avoidable morbidity and premature mortality. In the present paper, income will serve as a proxy for these capabilities. I assume that one should have at least two thirds of the median of the net household income for elementary human functioning. And, in addition, one should at least have a fair state of health. This has been measured in the GSOEP on a scale from 1 (none) to 3 (strong).

It is far more difficult to determine exactly what the capabilities for the more complex functionings are. In order to operationalise Sen's account of quality of life, I decided to use the actual functioning in a range of areas of life as proxies for the capabilities. These are indeed poor proxies because it leaves aside the choice element. For instance: it leaves aside whether or not one chooses to participate in local politics or to attend cultural events. Hence, if one does not participate in politics, an incorrect conclusion could be drawn that this person lacks the capability to do so. Nevertheless, for participating in local politics one should at least have the capability. By observing the actual functioning, one captures at least some of the capabilities. Pending further inquiry, I decided to measure the more complex capabilities in the way mentioned above.

The GSOEP-dataset consists of several variables which measure on a scale from 1 (every week) to 4 (never) the extent to which one attends to social events. The following variables will be used for measuring the extent one is socially integrated:

- Attend cultural events
- Attend cinema, pop, jazz concerts
- Participate in sports
- Attend social gatherings
- Help out friends, relatives, acquaintances
- Participate in local politics
- Attend church or other religious events

The construction of the variables mentioned above will appear in the next sections under the name *degree of social integration.*

The following variables will be used to measure the extent to which one is capable to develop other activities than working:

- Hours spent running errands
- Hours spent on housework
- Hours spent on childcare
- Hours spent on repairs/yard work
- Hours spent on other activities
- Hours spent on training, education

This construction will be called *leisure.*

All variables taken together – the basic functionings, the social functionings, and individual functionings – reflect Sen's account of the quality of life. The name of this variable is *capabilities.* In section 7 the relationship between the liberal accounts of life-quality and non-standard work-arrangements will be estimated.

6 RESULTS FOR THE UTLITARIAN ACCOUNT OF LIFE-QUALITY

In this section the question will be addressed whether working with a non-standard work-arrangement has severe implications for the well-being or satisfaction of the employees involved. Five different variables will be used for estimating the impact. Firstly, the variables which measure satisfaction: the aggregate of the mentioned domain satisfaction-variables, the "satisfaction with life today"-variable and the "satisfaction with life in the past five years"-variable. Furthermore, an attempt will be made to measure feelings of stress, control over life and the amount of worries along the lines described in the previous section.

Table 2 shows by work-arrangement the means of the three variables which measure life-satisfaction and the means of the variables which measure stress (overall mean = 1.0).

Table 2 Means well-being by work-arrangement

Type of work arrangement	Quality of life-measure	Standardized aggregated satisfaction	standardized satisfaction with life today	standardized satisfaction with life in five years	standardized overall control	Overall worries	standardized stress
Parttime and temporary	Mean	1.01	0.99	1.00	1.00	0.93	0.96
	N	97	97	97	90	97	90
	Std. Deviation	0.23	0.24	0.31	0.13	0.28	0.17
Parttime and permanent	Mean	1.10	1.02	1.01	0.99	1.03	1.01
	N	939	939	939	924	939	924
	Std. Deviation	0.23	0.24	0.28	0.14	0.23	0.15
Fulltime and temporary	Mean	0.94	0.94	0.95	0.98	0.87	0.93
	N	227	227	227	227	227	227
	Std. Deviation	0.25	0.26	0.31	0.14	0.28	0.18
Self-employed	Mean	0.95	0.99	1.04	1.01	0.94	0.98
	N	594	594	594	587	594	587
	Std. Deviation	0.26	0.25	0.28	0.14	0.30	0.19
Fulltime and permanent	Mean	0.99	1.01	1.00	1.01	1.02	1.01
	N	3861	3861	3861	3830	3861	3830
	Std. Deviation	0.25	0.24	0.29	0.14	0.23	0.15
Total	Mean	1.01	1.00	1.00	1.00	1.01	1.00
	N	5719	5719	5719	5658	5719	5658
	Std. Deviation	0.25	0.24	0.29	0.14	0.24	0.16

(Source: own computations on GSOEP)

In table 2 we see that employees with full-time temporary contracts score on all measures lower than employees with permanent contracts. These differences are all statistically significant. Furthermore, table 2 shows that part-time employees with permanent contracts score significantly higher than full-time employees with permanent contracts on the aggregated satisfaction (t-statistic=12.08). They score, however, significantly lower on the 'control over life'-variable (t-statistic=-3.09).

In section 3, we saw that part-time and/or temporary employees were primary located in the low-skill, low paid and low status jobs. In order to measure the impact of only the type of work-arrangement on the quality of life, one should control for those labour-market characteristics that influence the quality of life. Therefore, I will use the regression technique. I will estimate the following model:

$$\mu = \alpha + \beta X + \beta Z \qquad (1)$$

where μ is subsequently the aggregated satisfaction, the satisfaction with life today, the expected satisfaction with life the next five years, the control over life, the amount of worries, and the amount of stress, α is the constant, X the type of working-arrangement and Z includes dummies for gender, age, children, marital state, industry, profession, income and federal state.

In the following tables the α and the β's are estimated in the whole sample and in different sub-samples. Table 3 reports the estimates for β. In the appendix, one find the results for all parameters.

Table 3 Table 3: Regression on satisfaction-measures

Panel A

	aggregated happiness		satisfaction with life today		Satisfaction with life in five years		control	
	B	T	B	T	B	T	B	T
(Constant)	1.38***	10.95	1.41***	11.71	1.35***	9.38	1.18***	16.54
Reference: full-time, permanent, male								
parttime and temporary	-0.06	-1.40	-0.08**	-2.14	-0.08*	-1.62	-0.03	-1.50
parttime and permanent	-0.01	-0.31	-0.04	-1.20	-0.03	-0.97	-0.04**	-2.26
fulltime and temporary	-0.04*	-1.92	-0.05**	-2.37	-0.05**	-2.30	-0.01	-0.77
parttime and female	0.09**	2.58	0.06**	1.93	0.08**	2.03	0.03*	1.85
R sq.	0.14		0.11		0.13		0.14	
SEE	0.24		0.23		0.27		0.14	

Panel B

	Worries		stress	
	B	T	B	T
(Constant)	1.26	11.05	1.22***	16.09
Reference: full-time, permanent, male				
parttime and temporary	-0.04	-1.13	-0.04	-1.56
parttime and permanent	0.03	1.12	0.00	-0.22
fulltime and temporary	-0.15***	-7.93	-0.08***	-6.34
parttime and female	0.03	0.84	0.03	1.50
R sq.	0.20		0.22	
SEE	0.21		0.14	

(Source: own computations on GSOEP)

** significant at the 10% level*

*** significant at the 5% level*

**** significant at the 1% level*

Table 3 shows significant negative effects of temporary work either part-time or full-time on all five satisfaction or welfare measures. Working with a temporary contract seems to lead primarily to feelings of unhappiness and stress. The effects of working permanently part-time is only significantly negative for the control of life-variable.

The effect of temporary work is particularly high on the amount of worries. This has to do with the fact that in the worries-variable the amount of job-security determines to a large

extent the value. Females with a part-time contract are to a certain degree more satisfied and less worried than male full-time employees with a permanent contract.

The overall picture is quite clear: temporary work leads primarily to feelings of unhappiness and stress. This holds for men as well as women. The insecurity which the temporary job causes, outweighs the positive effects of freedom and leisure time. One might think, however, that the insecurity effect has less value for employees for whom the occupation is more or less a supplement to another life. This holds for example for the adolescent. Table 4 confirms this view. For the age-category 16-24 non-standard work-arrangements have neither significant positive nor negative effects on welfare. This category seems to be quite indifferent towards non-standard work-arrangements. None of the kinds of work-arrangements have a statistically significant influence on welfare.

Table 4 Table 4: Regression on welfare by age-category

Panel A

	Aggregated satisfaction				satisfaction with life today			
	16-24 years		55-64 years		16-24 years		55-64 years	
	B	T	B	T	B	T	B	T
(Constant)	-5.35	-0.33	5.64	0.82	7.59	0.54	1.28	0.16
parttime and temporary	-0.58	-0.36	-0.09	-0.98	-0.23	-0.17	-0.08	-0.73
parttime and permanent	0.40	1.13	0.03	0.41	-0.27	-0.92	0.10	1.23
fulltime and temporary	0.04	0.34	-0.10	-1.53	0.01	0.12	0.07	1.06
parttime and female	-0.49	-1.23	0.05	0.64	0.23	0.66	-0.09	-0.96
R sq.	0.49		0.37		0.57		0.28	
SEE	0.27		0.21		0.23		0.24	

Panel B

	Satisfaction with life in five years				control			
	16-24 years		55-64 years		16-24 years		55-64 years	
	B	T	B	T	B	T	B	T
(Constant)	-10.46	-0.96	5.91	0.61	-6.89	-0.88	8.34**	1.95
parttime and temporary	0.91	0.85	-0.16	-1.16	-0.58	-0.74	-0.04	-0.71
parttime and permanent	0.06	0.25	0.03	0.28	-0.01	-0.08	0.07	1.53
fulltime and temporary	0.05	0.66	-0.10	-1.13	-0.02	-0.47	0.07*	1.93
parttime and female	-0.27	-0.98	-0.05	-0.39	-0.06	-0.32	-0.06	-1.20
R sq.	0.61		0.21		0.62		0.29	
SEE	0.18		0.29		0.13		0.13	

Panel C

	Worries				stress			
	16-24 years		55-64 years		16-24 years		55-64 years	
	B	T	B	T	B	T	B	T
(Constant)	3.95	0.32	6.00	0.88	-1.47	-0.18	7.17	1.60
parttime and temporary	0.36	0.29	-0.17*	-1.77	-0.11	-0.14	-0.11	-1.68
parttime and permanent	-0.09	-0.35	-0.07	-0.94	-0.05	-0.30	0.00	0.02
fulltime and temporary	-0.06	-0.74	-0.13**	-2.10	-0.04	-0.79	-0.03	-0.67
parttime and female	0.06	0.20	0.13	1.53	0.00	0.00	0.03	0.59
R sq.	0.64		0.35		0.64		0.37	
SEE	0.21		0.21		0.14		0.14	

(Source: own computations on GSOEP)

6.1 CONCLUSIONS

From the tables in this section, the conclusion must be drawn that the effects of temporary work either on a full-time basis or on a part-time basis, are above all negative. Temporary work leads primarily to feelings of dissatisfaction and stress. This holds especially for men. Regarding part-time work, one sees that the influence is in most cases neither positive nor negative. However, women seem to be less stressed and worried than men. This also holds for older employees.

The results on the control, stress- and worries measures are more ambiguous. Women with a part-time contract seem to have more control and less stress than full-time employees. Older employees, either temporary or part-time, score high on the control-variable.

Regarding the central question of this research paper, the conclusions of this section are, that temporary work leads primarily to feelings of dissatisfaction and stress. The effects of part-time work are ambiguous. However, particularly women seem to appreciate working with a part-time contract. The next section explores the influence of non-standard work-arrangements on the liberal account of life-quality.

7 RESULTS FOR THE LIBERAL ACCOUNT OF LIFE-QUALITY

In this section, the question will be addressed whether non-standard work-arrangements decrease or increase the measure of primary goods or capabilities, mentioned in section 5.2. The same model as used in the latter section will also be used here. The following variables appear as dependent variable: *primary goods, primary goods + leisure, degree of social integration,* and *capabilities*. Table 5 reports the means by work-arrangement.

Table 5: means life-quality by work-arrangement

		Standardized quantity primary goods	primary goods + leisure	standardized degree of social integration	basic + social functionings	Amount of leisure time	basic functionings + social functionings + leisure
parttime and temporary	Mean	0.93	1.16	0.97	1.02	1.53	1.20
	N	84.38	83.83	97.00	83.83	96.44	83.83
	Std. Deviation	0.64	0.50	0.20	0.17	0.92	0.39
parttime and permanent	Mean	0.94	1.26	1.00	1.11	1.58	1.35
	N	914.73	904.63	938.76	904.63	928.66	904.63
	Std. Deviation	0.56	0.53	0.17	0.19	0.92	0.55
fulltime and temporary	Mean	0.79	0.84	0.97	0.93	0.89	0.90
	N	219.03	217.27	227.47	217.27	225.71	217.27
	Std. Deviation	0.37	0.30	0.19	0.13	0.45	0.26
self-employed	Mean	1.25	1.07	1.04	0.99	0.88	0.93
	N	568.81	563.48	594.10	563.48	588.78	563.48
	Std. Deviation	1.06	0.63	0.16	0.16	0.70	0.42
fulltime and permanent	Mean	1.01	0.94	0.99	0.98	0.87	0.92
	N	3667.65	3640.75	3861.45	3640.75	3831.73	3640.75
	Std. Deviation	0.73	0.42	0.17	0.12	0.46	0.26
Total	Mean	1.01	1.00	1.00	1.00	1.00	1.00
	N	5454.60	5409.96	5718.78	5409.96	5671.32	5409.96
	Std. Deviation	0.74	0.48	0.17	0.15	0.65	0.38

(Source: own computations on GSOEP)

Temporary part-time employees score significantly lower on primary goods, degree of social integration and on the combination basic and social functionings, compared to full-time permanent employees. Due to having more leisure-time they score significantly higher on the combinations primary goods + leisure, and capabilities (incl. leisure-time). Part-time employees with a permanent contract score also significantly lower on primary goods and on the combination basic and social functionings. The difference concerning the degree of social integration is not significant, and – not surprising – this category scores also higher on the combinations primary goods with leisure and capabilities and leisure. Compared to employees with permanent contracts, full-time temporary employees have significantly less primary goods, less primary goods combined with leisure, and less capabilities. In this section, the same model will be used as in section 6. Table 6 reports the results of this model (in the appendix one find results for all parameters).

Table 6: Regressions on life-quality

Panel A

	Primary goods		Primary goods + leisure		Degree of social integration		Basic and social functionings	
	B	T	B	T	B	T	B	T
(Constant)	-0.17	-0.46	0.62	2.73	0.83***	9.92	1.15***	22.18
Reference: full-time, permanent,								
parttime and temporary	-0.14	-1.14	-0.04	-0.60	-0.04	-1.48	-0.01	-0.87
parttime and permanent	-0.19**	-2.07	0.02	0.34	-0.02	-1.09	0.03**	2.48
fulltime and temporary	-0.08	-1.33	-0.04	-0.99	0.00	0.11	-0.02***	-2.81
parttime and female	0.20**	2.02	0.26	4.26	-0.01	-0.37	0.07***	4.75
R sq.	0.29		0.26		0.21		0.54	
SEE	0.67		0.42		0.15		0.09	

Panel B

	Capabilities (incl leisure)	
	B	T
(Constant)	1.28	8.48
parttime and temporary	0.02	0.33
parttime and permanent	0.13***	3.44
fulltime and temporary	-0.01	-0.37
parttime and female	0.19***	4.80
R sq.	0.31	
SEE	0.28	

From table 6, the conclusion must be drawn that temporary work has also negative effects on life-quality in the liberal sense. The sign of the effect of being female with a part-time contract is significantly positive for the primary goods-measure and the capabilities-index. Again, it is striking that particularly for women, part-time work seems to enhance the quality of life. So: working part-time not only makes women more satisfied, but it offers them also more opportunities to develop and fulfil life-plans. In table 5, we saw that non-standard work-arrangements had neither a positive effect nor a negative effect on the satisfaction measures of the adolescent. Table 7 show the results for the life-quality measures.

Table 7: regression on life-quality by age-categories

Panel A

	Primary goods				Primary goods + leisure			
	16-24 years		55-64 years		16-24 years		55-64 years	
	B	T	B	T	B	T	B	T
(Constant)	15.22	1.03	-35.80	29.08	-6.32	-0.53	-24.96	-1.56
part-time and temporary	-3.26	-1.57	-0.46	0.42	-1.06	-0.63	-0.33	-1.44
part-time and permanent	0.44	1.83	-0.27	0.33	0.45	2.30	-0.10	-0.56
full-time and temporary	0.02	0.23	-0.22	0.26	-0.01	-0.09	-0.12	-0.85
part-time and female			0.43	0.37			0.38	1.87
R sq.	0.85		0.29		0.79		0.30	
SEE	0.24		0.87		0.19		0.47	

Panel B

	Degree of social integration				Basic and social functionings			
	16-24 years		55-64 years		16-24 years		55-64 years	
(Constant)	7.19***	0.88	-9.18*	-1.73	-3.32	-0.62	-1.52	-0.55
parttime and temporary	-0.35	-0.30	-0.07	-0.88	0.02	0.03	-0.09**	-2.27
parttime and permanent	0.26**	1.96	-0.02	-0.32	0.11	1.31	0.00	-0.04
fulltime and temporary	0.06	1.09	0.06	1.34	-0.01	-0.39	0.00	-0.07
parttime and female			-0.03	-0.38			0.07**	2.05
R sq.	0.65		0.25		0.79		0.59	
SEE	0.13		0.16		0.08		0.08	

Panel C

	Capabilities (incl. Leisure)			
	16-24 years		55-64 years	
(Constant)	-15.59	-1.31	-7.82	-1.00
parttime and temporary	0.58	0.35	-0.14	-1.28
parttime and permanent	0.28	1.47	0.03	0.40
fulltime and temporary	-0.03	-0.32	-0.02	-0.23
parttime and female			0.20**	2.04
R sq.	0.67		0.38	
SEE	0.18		0.23	

(Source: own computations on GSOEP)

Table 7 shows the positive impact of part-time permanent work-arrangements on the quality of life of young employees. This in contrast to table 5 which showed that the welfare of the adolescent was more or less indifferent towards non-standard work-arrangements.

Furthermore, panels A to C show that part-time contracts offer women older than fifty-five more opportunities to pursue a conception of the good life. Elderly male employees are somehow indifferent towards part-time work-arrangements: the coefficients are very small and are not statistically significant for any of the dependent variables.

7.1 CONCLUSIONS

From this section the conclusion must be drawn that the impact of temporary work-arrangements is less severe for the liberal quality of life than for the welfare metrics. The effect is only significantly negative for the capabilities of the low-educated. Part-time permanent work-arrangements even seem to enhance the opportunities for independently pursuing a conception of the good life. This especially holds for women, and the older employees.

The sections 6 and 7 showed negative effects for working temporary on the happiness and liberal measures of quality of life and positive effects for working part-time. Temporary work-arrangements seem to lower the quality of life, while working part-time enhances life-quality. One would expect that a transition from a permanent job to a temporary job would decrease one's life-quality, whilst going from a fulltime to a part-time job would increase the quality of life. The next table presents the results for these transitions. The employment contract dummies in formula (1) – the β's - have been replaced by four variables, indicating the following transitions:

- Permanent 1995 and temporary 1996 (67 cases; 1.0% of total)
- Part-time 1995 and full-time 1996 (111 cases; 1.7% of total)
- Temporary 1995 and permanent 1996 (121 cases; 1.8% of total)

- Full-time 1995 and part-time 1996 (81 cases; 1.2% of total)

Due to the small dataset, one would not expect many significant results. Table 8 shows the results.

Table 8: Regressions on life-quality by labour market transitions

Panel A

	aggregated satisfaction		standardized satisfaction with life today		satisfaction with life in five years	
	B	t	B	t	B	T
(Constant)	1.05	8.24	1.33	11.36	1.46	10.49
permanent 1995 and temporary1996	-0.02	-0.40	-0.06*	-1.80	-0.14**	-3.33
part-time 1995 fulltime 1996	-0.01	-0.43	-0.01	-0.46	-0.04	-1.25
temporary 1995 and permanent 1996	-0.01	-0.41	-0.01	-0.34	-0.03	-0.78
fulltime 1995 part-time 1996	0.03	0.91	0.04	1.32	0.03	0.80
R sq.	0.12		0.08		0.10	
SEE	0.24		0.22		0.26	

Panel B

	primary goods		primary goods + leisure	
	B	t	B	t
(Constant)	0.41	1.28	0.49***	2.34
permanent 1995 and temporary1996	-0.10	-1.00	-0.06	-0.90
part-time 1995 fulltime 1996	-0.01	-0.18	-0.01	-0.16
temporary 1995 and permanent 1996	0.00	-0.02	-0.02	-0.41
fulltime 1995 part-time 1996	-0.15**	-1.72	-0.04	-0.77
R sq.	0.26		0.20	
SEE	0.60		0.39	

Panel C

	degree of social integration		capabilities		capabilities + leisure	
	B	t	B	t	B	T
(Constant)	0.70	8.77	0.93	18.18	0.75	4.97
permanent 1995 and temporary1996	0.00	0.19	-0.02	-1.31	-0.02	-0.40
part-time 1995 fulltime 1996	0.01	0.38	0.00	-0.32	0.00	-0.09
temporary 1995 and permanent 1996	0.00	-0.21	-0.02	-2.02	-0.03	-0.89
fulltime 1995 part-time 1996	0.04*	1.66	0.01	0.82	0.04	0.90
R sq.	0.19		0.45		0.19	
SEE	0.15		0.10		0.28	

The effect of a transition from permanent to temporary is negative on all welfare measures. However, only the effects on the 'satisfaction with life today'- and 'satisfaction with life in five years' variables are statistically significant. The effect of a transition from fulltime to part-time is on most welfare measures positive, except on the primary goods index. However, this could be explained by the loss of disposable income that normally goes together with the transition mentioned.

Table 8 seems to confirm the hypothesis concerning the transitions from permanent to temporary and from full-time to permanent. A transition from a permanent job to a temporary job decreases the quality of life. And a transition from a full-time job to a part-time job increases one's life-quality. However, if one regards the primary goods index, a transition to part-time decreases one's possibilities to live independently and consequently one's quality of life. These results should however be interpreted with care. Due to the small dataset, most results are statistically not significant.

8 CONCLUSIONS

This paper has addressed the question whether working part-time and/or temporary has implications for the quality of life of the employees involved. For answering this question one should assess what determines life-quality. I distinguished an utilitarian account and a liberal one. In the utilitarian account life-quality depends on the feelings of satisfaction or stress. The balance of enjoyment over dissatisfaction determines the life-quality. In the present paper, this is measured by the GSOEP-variables, which measure satisfaction and stress. In the liberal account, the quality of life depends on the extent to which one is capable of autonomous "forming, revising and pursuing" a conception of the good life. The liberal account focuses on the opportunities one needs instead of the extent to which one forms, revises and pursues a conception of the good life. According to Rawls, these opportunities or primary goods are the basic liberties, income and wealth and the bases of self-respect. Sen has a broader view of these opportunities. He focuses on functionings: whether someone has the opportunities / capabilities to be adequately nourished, sheltered and whether one has the capabilities to attend social events or has the time to develop any hobbies.

Besides assessing what determines life-quality, for answering this question one should control for gender, industry, age, income etc, since non-standard work-arrangements are primary located in low-skilled, low paid and low-status jobs and is highly gender-biased.

Temporary work-arrangements overwhelmingly have negative effects on life-satisfaction, either part-time or full-time. However, women with a part-time contract seem to appreciate their work-arrangements. In almost all tables the effect of being female with a part-time contract is significantly positive for life-satisfaction. Part-time contracts do not only enhance the life-satisfaction of women, it also offers them also more opportunities/primary goods/ capabilities for independently forming and pursuing a conception of the good life.

Furthermore, temporary work seems to have a less negative impact on the liberal account of life-quality than on the utilitarian one. Part-time permanent work-arrangements seem to enhance the opportunities for independently pursuing a conception of the good life. This especially holds for women, and the older employees. These results also hold if one regards transitions from full-time to part-time and permanent to temporary work arrangements. Here one sees that a transition from a permanent job to a temporary job decreases the quality of life. Whilst a transition from a full-time job to a part-time job increases one's life-quality.

The results mentioned above should be interpreted with care. More research is needed on the measurement-problems of abstract notions on, for instance, the quality of life. Nevertheless, the present research gives some indication of the effects of non-standard work-arrangements and how they depend on a range of personal characteristics and the vision one has on what is important in life. In some cas es, the effects oppose each other whether one measures life-quality in terms of life-satisfaction or in terms of freedom or autonomy.

9 APPENDIX

Table A1

Selection sample	
Total sample GSOEP 1996	16023
Minus unemployed / inactive	8712
Minus individuals below the age of 16 and above 64	56
Minus the individuals who not work now	681
Work-sample	6547

Appendix table A2: Regression on satisfaction-measures

	aggregated happiness		satisfaction with life today		satisfaction with life in five years		control		worries		stress	
	B	T	B	T	B	T	B	T	B	T	B	T
(Constant)	1.38***	10.95	1.41***	11.71	1.35***	9.38	1.18***	16.54	1.26	11.05	1.22***	16.09
Reference: full-time, permanent, male												
parttime and temporary	-0.06	-1.40	-0.08**	-2.14	-0.08*	-1.62	-0.03	-1.50	-0.04	-1.13	-0.04	-1.56
parttime and permanent	-0.01	-0.31	-0.04	-1.20	-0.03	-0.97	-0.04**	-2.26	0.03	1.12	0.00	-0.22
fulltime and temporary	-0.04*	-1.92	-0.05**	-2.37	-0.05**	-2.30	-0.01	-0.77	-0.15***	-7.93	-0.08***	-6.34
parttime and female	0.09**	2.58	0.06**	1.93	0.08**	2.03	0.03*	1.85	0.03	0.84	0.03	1.50
Female	0.06***	4.95	-0.01	-0.91	0.00	0.19	-0.02***	-2.84	-0.02	-1.44	-0.02**	-2.42
Reference: 40-54 yrs												
16-24 years	-0.06	-1.54	-0.02	-0.52	0.03	0.70	-0.01	-0.65	0.01	0.33	0.00	-0.06
24-39 years	0.00	0.26	0.03	1.61	0.07***	3.13	0.00	0.17	0.03**	1.88	0.02	1.50
55-64 years	-0.03	-1.45	-0.08***	-3.42	-0.06**	-2.11	-0.01	-0.57	-0.07***	-3.29	-0.04***	-2.75
Age of individual	-0.01**	-2.27	-0.02***	-3.93	-0.02***	-3.57	-0.01**	-2.81	-0.02***	-4.71	-0.02***	-4.87
age squared	0.00	1.81	0.00***	3.82	0.00***	3.14	0.00**	2.13	0.00***	4.93	0.00***	4.71
Reference: high-school												
less than highschool	0.00	0.44	0.01	0.91	0.01	0.62	-0.01	-1.58	-0.01	-1.54	-0.01*	-1.90

	aggregated happiness		Satisfaction with life today		satisfaction with life in five years		Control		Worries		Stress	
	B	T	B	T	B	T	B	T	B	T	B	T
more than highschool	-0.01	-0.71	0.00	0.06	0.02	1.04	0.03***	3.50	0.07***	6.24	0.05***	6.34
Reference: hourly wage between 2/3 median and 3/2* median*												
hourly wage < 2/3 * median	-0.05**	-2.48	-0.02	-1.14	0.01	0.58	-0.01	-1.39	-0.03**	-1.81	-0.02**	-2.02
hourly wage > 3/2 * median	-0.01	-0.29	-0.02	-0.83	-0.02	-0.81	0.00	-0.29	0.00	-0.21	0.00	-0.30
hourly wage	0.00**	-2.00	0.00	1.32	0.01***	2.58	0.00***	3.09	0.01***	4.25	0.01***	4.65
Hourly wage squared	0.00*	1.89	0.00	-0.57	0.00	-1.43	0.00	-1.57	0.00***	-4.18	0.00***	-3.89
post-government household income per month	0.00	1.49	0.00	1.42	0.00	1.72	0.00	-0.11	0.00***	2.38	0.00*	1.74
post-government household income per month squared	0.00	-0.91	0.00	-1.11	0.00	-0.72	0.00	0.42	0.00	-1.07	0.00	-0.61

	aggregated happiness		Satisfaction with life today		satisfaction with life in five years		Control		Worries		Stress	
	B	T	B	T	B	T	B	T	B	T	B	T
Reference: net hh income between 2/3 median and 3/2* median*												
net household income less than 2/3 of median	-0.02	-1.12	-0.05***	-3.22	0.01	0.48	-0.01	-1.05	0.00	0.30	0.00	-0.26
Net household income more than 3/2 of median	0.01	0.30	0.00	-0.13	0.00	-0.20	0.02**	1.93	-0.01	-0.54	0.01	0.50
Reference: married												
Single	-0.02*	-1.80	-0.04**	-2.82	0.00	-0.26	-0.02**	-2.14	0.03***	2.78	0.01	1.09
Widowed	0.11***	3.83	0.00	0.05	-0.08**	-2.25	-0.01	-0.64	0.00	0.06	0.00	-0.26
Divorced	0.00	0.19	-0.06***	-3.72	-0.05**	-2.46	0.00	-0.01	0.01	0.54	0.00	0.41
Seperated	0.03	1.09	-0.07**	-2.31	-0.05	-1.35	-0.04**	-2.15	-0.04	-1.55	-0.04**	-2.18
Reference: no children												
one child	-0.02**	-1.98	0.00	-0.23	0.01	0.75	0.01	1.57	-0.01	-1.17	0.00	-0.15
two children	-0.05***	-3.31	-0.01	-0.72	0.01	0.77	-0.01	-0.97	-0.01	-0.73	-0.01	-1.01
three children	-0.06**	-2.19	-0.01	-0.30	0.03	0.94	-0.03**	-2.00	0.01	0.26	-0.01	-0.74

	aggregated happiness		Satisfaction with life today		satisfaction with life in five years		Control		Worries		Stress	
	B	T	B	T	B	T	B	T	B	T	B	T
Three or more children	-0.22***	-5.90	-0.28***	-7.94	-0.27***	-6.35	-0.07***	-3.24	-0.14***	-4.00	-0.10***	-4.54
Reference: manufacturing												
Agriculture	-0.07*	-1.71	0.01	0.36	0.09**	2.07	0.04**	2.04	0.07**	2.16	0.06***	2.59
Mining	-0.01	-0.16	0.02	0.29	-0.02	-0.29	-0.03	-0.71	0.09	1.34	0.03	0.68
Electricity	-0.04	-1.09	-0.03	-0.86	-0.05	-1.09	-0.04*	-1.69	0.01	0.32	-0.01	-0.55
Construction	-0.04**	-2.23	0.02	1.21	-0.01	-0.48	0.01	0.83	0.03*	1.74	0.02*	1.70
Hotels and Catering	-0.06	-1.37	0.03	0.75	0.05	0.99	0.02	0.81	0.07*	1.73	0.04*	1.69
Transport and Communication	0.02	1.05	0.02	1.17	0.02	0.71	0.01	1.15	0.03*	1.70	0.02*	1.82
Financial Intermediation	-0.01	-0.34	0.02	0.67	0.03	0.93	0.04**	2.58	0.02	0.95	0.03*	1.93
Real estate, Renting and Business Activities	0.00	-0.02	-0.04	-1.31	-0.04	-1.35	-0.01	-0.79	0.05*	1.88	0.02	1.04
Public Administration	0.03**	1.80	0.04***	3.03	0.05***	2.96	0.02*	1.78	0.10***	7.16	0.06***	6.23
Health and Social Work	-0.01	-0.37	0.01	0.52	0.00	-0.11	0.02**	2.09	0.07***	4.27	0.04***	4.20

	aggregated happiness		Satisfaction with life today		satisfaction with life in five years		Control		Worries		Stress	
	B	T	B	T	B	T	B	T	B	T	B	T
Other Community, social and personal activities	-0.02	-1.01	0.02	0.95	0.05	1.69	0.01	1.04	0.04**	2.00	0.03**	2.00
Extra-territorial organizations	0.15	1.40	0.13	1.24	0.26**	2.16	0.03	0.51	0.08	0.85	0.06	0.88
Wholesale	-0.02	-0.63	-0.02	-0.76	0.02	0.52	0.01	0.51	0.09***	3.29	0.05***	2.72
Retail and Repair	-0.02	-1.19	-0.02	-1.35	-0.03	-1.52	-0.01	-1.00	-0.03*	-1.78	-0.02*	-1.81
Reference: professionals												
Legislators, senior officials and managers	-0.03	-1.38	-0.03	-1.36	-0.03	-1.06	0.02	1.23	0.01	0.56	0.01	1.00
Technicians and associate professionals	-0.02	-1.25	-0.03**	-1.71	-0.02	-0.79	0.00	-0.20	0.02	1.25	0.01	0.85
Clerks	0.02	1.22	-0.01	-0.68	0.00	-0.05	0.00	0.14	0.00	0.30	0.00	0.29

	aggregated happiness		Satisfaction with life today		satisfaction with life in five years		Control		Worries		Stress	
	B	T	B	T	B	T	B	T	B	T	B	T
Service workers and shop and market sales workers	0.00	0.11	0.00	-0.29	-0.01	-0.50	0.01	0.49	-0.01	-0.67	0.00	-0.27
Skilled agricultural and fishery workers	0.01	0.05	-0.23**	-1.94	-0.23*	-1.61	-0.09	-1.21	0.01	0.08	-0.04	-0.51
Craft and related trade workers	-0.03**	-2.32	-0.05***	-3.61	-0.04**	-2.46	-0.02**	-2.50	-0.04***	-3.14	-0.03***	-3.54
Plant and machine operators and assemblers	-0.03*	-1.64	-0.05**	-2.49	-0.08***	-3.53	-0.05***	-3.89	-0.04**	-2.14	-0.04***	-3.44
Elementary occupations	-0.01	-0.31	-0.01	-0.32	-0.01	-0.26	-0.03**	-2.10	-0.06***	-2.87	-0.04***	-3.14
Reference: North-Rhein Westfalia												
Berlin-west	-0.06**	-2.65	-0.13***	-5.87	-0.10***	-3.73	-0.03**	-2.07	-0.08***	-3.89	-0.05***	-3.90
Schlesweig Holstein	0.03	1.06	0.00	-0.18	-0.05*	-1.68	0.03**	2.34	0.05**	2.46	0.04***	2.95
Hamburg	0.09***	2.69	0.02	0.54	0.04	1.17	0.03	1.60	0.01	0.32	0.02	0.99
Lower-Saxony	0.03*	1.70	0.02	0.97	0.01	0.33	0.01	0.84	0.03**	2.33	0.02**	2.15

	aggregated happiness		Satisfaction with life today		satisfaction with life in five years		Control		Worries		Stress	
	B	T	B	T	B	T	B	T	B	T	B	T
Bremen	-0.08*	-1.76	0.11**	2.55	0.13**	2.51	0.04	1.48	0.07*	1.78	0.06**	2.04
Hesse	0.00	-0.09	-0.03*	-1.70	-0.05**	-2.54	-0.01	-1.08	-0.01	-0.56	-0.01	-0.93
Rheinland, Pfalz, Saar	0.00	0.18	0.02	1.16	0.03	1.26	0.01	0.72	0.03*	1.93	0.02*	1.79
Baden-Wuerttemberg	-0.04**	-2.57	-0.04***	-2.59	-0.04***	-2.73	-0.02**	-2.55	0.00	-0.08	-0.01	-1.25
Bavaria	-0.04***	-2.63	-0.03**	-2.49	-0.06***	-3.83	-0.03***	-3.97	-0.02	-1.25	-0.02***	-2.81
Berlin (east)	-0.25***	-7.33	-0.20***	-6.08	-0.21***	-5.38	-0.07***	-3.45	-0.11***	-3.71	-0.09***	-4.41
Mecklenburg / Vorpommeren	-0.11***	-3.26	-0.02	-0.63	-0.02	-0.45	-0.03	-1.30	-0.02	-0.54	-0.02	-1.02
Brandenburg	-0.12***	-4.47	-0.05**	-1.84	-0.06**	-2.01	-0.01	-0.62	-0.07***	-2.64	-0.04**	-2.28
Sachsen-Anhalt	-0.08***	-2.82	-0.02	-0.81	0.01	0.37	0.02	1.42	-0.01	-0.44	0.01	0.34
Thueringen	-0.06**	-2.00	-0.06**	-2.20	-0.06*	-1.71	-0.01	-0.31	-0.07***	-2.67	-0.04**	-2.16
Saxony	-0.12***	-4.88	-0.03	-1.21	0.01	0.35	0.01	0.88	-0.04*	-1.80	-0.01	-0.95
R sq.	0.14		0.11		0.13		0.14		0.20		0.22	
SEE	0.24		0.23		0.27		0.14		0.21		0.14	

(Source: own computations on GSOEP)

Table A3: regression on life-quality

	Primary goods		Primary goods + leisure		Degree of social integration		Basic and social functionings		Capabilities (incl leisure)	
	B	T	B	T	B	T	B	T	B	T
(Constant)	-0.17	-0.46	0.62	2.73	0.83***	9.92	1.15***	22.18	1.28	8.48
Reference: full-time, permanent,										
parttime and temporary	-0.14	-1.14	-0.04	-0.60	-0.04	-1.48	-0.01	-0.87	0.02	0.33
parttime and permanent	-0.19**	-2.07	0.02	0.34	-0.02	-1.09	0.03**	2.48	0.13***	3.44
fulltime and temporary	-0.08	-1.33	-0.04	-0.99	0.00	0.11	-0.02***	-2.81	-0.01	-0.37
parttime and female	0.20**	2.02	0.26	4.26	-0.01	-0.37	0.07***	4.75	0.19***	4.80
Female	-0.05	-1.56	0.04	1.69	0.04***	4.60	0.02	4.80	0.07***	5.28
Reference: 40-54 years										
16-24 years	-0.01	-0.10	-0.10	-1.34	-0.01	-0.19	-0.03*	-1.85	-0.11**	-2.22
24-39 years	-0.01	-0.24	-0.02	-0.61	-0.01	-0.47	0.00	0.11	-0.01	-0.62
55-64 years	0.02	0.31	0.06	1.32	0.00	-0.24	0.00	0.17	0.05*	1.65
Age of individual	0.01	0.64	0.00	0.00	0.01*	1.82	-0.01**	-2.46	-0.01	-1.20
age squared	0.00	-0.47	0.00	-0.26	0.00	-0.69	0.00**	2.12	0.00	0.55
Reference High school										
less than highschool	-0.02	-0.56	-0.03	-1.63	0.00	0.45	-0.01***	-2.71	-0.03**	-2.24

	Primary goods		Primary goods + leisure		Degree of social integration		Basic and social functionings		Capabilities (incl leisure)	
	B	T	B	T	B	T	B	T	B	T
more than highschool	0.07*	1.78	0.02	0.80	-0.03***	-3.01	0.01	1.40	-0.01	-0.72
*Reference: hourly wage between 2/3*median and 3/2* median*										
hourly wage < 2/3 * median	0.04	0.67	0.00	0.14	-0.01	-0.72	-0.01*	-1.86	-0.02	-0.93
hourly wage > 3/2 * median	0.16***	2.81	0.12	3.40	0.04***	2.84	0.02**	2.43	0.05**	2.15
hourly wage	0.01	1.75	0.00	-0.53	0.00***	-2.82	0.00	-1.55	-0.01***	-3.20
hwage squared	0.00	-0.89	0.00	1.08	0.00	1.13	0.00	1.24	0.00***	2.92
post-government household income per month	0.00***	8.49	0.00	6.56	0.00	0.30	0.00	0.42	0.00	-0.32
post-government household income per month squared	0.00	-0.38	0.00	-0.12	0.00	-0.65	0.00	-0.09	0.00	0.26

	Primary goods		Primary goods + leisure		Degree of social integration		Basic and social functionings		Capabilities (incl leisure)	
	B	T	B	T	B	T	B	T	B	T
*Reference: net hh income between 2/3*median and 3/2*median*										
net household income less than 2/3 of median	-0.17***	-3.06	0.03	1.26	-0.01	-1.01	-0.18***	-29.11	-0.11***	-5.83
Net household income more than 3/2 of median	0.10**	2.27	-0.08	-2.30	-0.03**	-2.50	0.00	-0.13	0.01	0.22
Reference: married										
Single	0.07**	1.73	0.02	0.97	-0.05***	-5.76	-0.01	-1.59	-0.01	-0.90
Widowed	0.00	-0.05	0.04	0.81	-0.05**	-2.69	0.01	0.50	0.05	1.38
Divorced	0.03	0.56	0.05	1.66	-0.01	-1.11	0.01*	1.62	0.04**	2.10
Seperated	-0.07	-0.80	0.06	1.04	-0.01	-0.56	0.01	1.12	0.10***	2.74
Reference: no children										
one child	0.00	0.02	0.10***	4.62	0.02***	2.82	0.04***	7.89	0.12***	8.31
two children	0.00	-0.06	0.16***	6.23	0.04***	4.11	0.06***	10.28	0.20***	11.26

	Primary goods		Primary goods + leisure		Degree of social integration		Basic and social functionings		Capabilities (incl leisure)	
	B	T	B	T	B	T	B	T	B	T
Three children	-0.18**	-2.49	0.04	0.88	0.05***	2.99	0.05***	4.83	0.16***	5.19
three or more children	-0.45***	-4.21	-0.03	-0.42	0.13***	5.24	0.06***	3.69	0.23***	5.11
Reference: manufacturing										
Agriculture	0.07	0.59	-0.01	-0.10	0.00	-0.09	0.01	0.47	-0.04	-0.78
Mining	-0.18	-0.82	-0.09	-0.68	0.00	0.09	0.01	0.31	0.00	0.02
Electricity	-0.07	-0.62	-0.04	-0.56	-0.04*	-1.80	-0.01	-0.90	-0.01	-0.25
Construction	-0.08*	-1.73	-0.10***	-3.45	0.00	-0.25	-0.02***	-2.61	-0.07***	-3.57
Hotels and Catering	-0.08	-0.68	-0.10	-1.30	0.05*	1.70	0.00	0.18	-0.06	-1.10
Transport and Communication	-0.02	-0.36	-0.02	-0.43	0.03**	2.49	0.01	1.32	0.00	0.01
Financial Intermediation	0.34***	4.76	0.24***	5.37	-0.06***	-3.38	0.02**	2.28	0.08***	2.73
Real estate, Renting and Business Activities	0.11	1.36	0.09*	1.89	0.02	1.22	0.02**	2.10	0.05	1.56
Public Administration	0.03	0.69	0.05*	1.77	0.00	-0.47	0.03***	4.77	0.05***	2.65
Health and Social Work	0.00	-0.06	-0.01	-0.19	-0.01	-1.20	0.01	1.42	0.00	0.03

	Primary goods		Primary goods + leisure		Degree of social integration		Basic and social functionings		Capabilities (incl leisure)	
	B	T	B	T	B	T	B	T	B	T
Other Community, social and personal activities	0.31***	4.36	0.16***	3.66	-0.02	-1.31	0.01	0.83	0.01	0.39
Extra-territorial organizations	-0.04	-0.14	-0.18	-0.94	-0.04	-0.60	-0.04	-0.99	-0.18	-1.42
Wholesale	0.01	0.15	-0.02	-0.41	-0.03	-1.46	0.00	0.41	-0.03	-0.74
Retail and Repair	-0.01	-0.18	-0.04	-1.10	0.00	0.03	-0.02**	-2.28	-0.04*	-1.84
Reference: professionals										
Legislators, senior officials and managers	0.29***	4.04	0.08*	1.92	0.03*	1.81	-0.01	-1.02	-0.06**	-2.18
Technicians and associate professionals	-0.08*	-1.64	-0.03	-0.91	0.04***	3.58	0.01**	2.06	0.02	0.97
Clerks	0.03	0.72	0.02	0.64	0.00	0.08	0.00	0.02	0.00	0.10

	Primary goods		Primary goods + leisure		Degree of social integration		Basic and social functionings		Capabilities (incl leisure)	
	B	T	B	T	B	T	B	T	B	T
Service workers nad shop and market sales workers	-0.02	-0.46	0.04	1.22	0.01	1.13	0.02**	2.44	0.06***	2.81
Skilled agricultural and fishery workers	-0.23	-0.64	-0.04	-0.17	0.01	0.18	0.01	0.29	0.08	0.57
Craft and related trade workers	0.02	0.41	0.03	1.16	0.03***	3.15	0.00	0.41	0.02	1.33
Plant and machine operators and assemblers	-0.03	-0.43	0.00	0.07	0.06***	4.31	0.00	-0.15	0.01	0.60
Elementary occupations	-0.08	-1.19	0.00	0.02	0.05***	3.74	0.01	0.72	0.04	1.61
Reference: North-Rhine Westphalia										
berlin-west	0.00	0.04	-0.06	-1.51	-0.03**	-2.12	-0.05***	-5.22	-0.09***	-3.22
Schlesweig Holstein	0.04	0.65	0.02	0.56	-0.02	-0.97	0.01	1.30	0.01	0.28
Hamburg	-0.10	-1.09	-0.11*	-1.80	-0.08***	-3.67	-0.03*	-1.93	-0.07*	-1.73
Lower-Saxony	-0.06	-1.18	-0.08***	-2.84	-0.01	-0.54	-0.02**	-2.39	-0.06***	-3.27

	Primary goods		Primary goods + leisure		Degree of social integration		Basic and social functionings		Capabilities (incl leisure)	
	B	T	B	T	B	T	B	T	B	T
Bremen	0.02	0.11	-0.09	-1.12	-0.01	-0.27	-0.01	-0.80	-0.11**	-1.97
Hesse	0.07	1.42	0.04	1.19	-0.02*	-1.80	-0.01	-1.22	0.00	-0.13
Rheinland, Pfalz, Saar	0.23***	4.32	0.09***	2.61	0.00	0.39	-0.01	-0.66	-0.03	-1.41
Baden-Wuerttemberg	0.05	1.11	-0.02	-0.83	0.00	-0.53	-0.02***	-3.68	-0.05***	-3.24
Bavaria	0.06	1.46	0.01	0.40	0.00	0.12	-0.02***	-2.93	-0.03*	-1.66
Berlin (east)	0.05	0.47	-0.03	-0.54	0.02	0.90	-0.05***	-3.61	-0.08**	-2.02
Mecklenburg / Vorpommeren	0.00	-0.03	-0.07	-1.09	0.03	1.36	-0.03*	-1.83	-0.08**	-1.92
Brandenburg	-0.01	-0.12	-0.04	-0.78	0.06***	3.01	-0.02	-1.36	-0.04	-1.26
Sachsen-Anhalt	0.11	1.33	0.00	-0.09	0.05**	2.30	-0.01	-1.16	-0.07**	-1.95
Thueringen	0.03	0.35	0.00	-0.02	0.05**	2.34	-0.01	-1.11	-0.02	-0.65
Saxony	0.01	0.19	-0.06	-1.45	0.04***	2.76	-0.02**	-2.36	-0.08***	-2.82
R sq.	0.29		0.26		0.21		0.54		0.31	
SEE	0.67		0.42		0.15		0.09		0.28	

(Source: own computations on GSOEP)

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